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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/964,734	09/28/2001	Hideki Morikaku	Q66051	3096

7590 06/05/2002

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EXAMINER
ELKASSABGI, HEBA

ART UNIT	PAPER NUMBER
2834	

DATE MAILED: 06/05/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 07-01)

Office Action Summary	Application No.	Applicant(s)	
	09/964,734	MORIKAKU ET AL.	
	Examiner	Art Unit	
	Heba Elkassabgi	2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 September 2001* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☒ Certified copies of the priority documents have been received in Application No. *09/964,734* .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: Modified output terminal structure of AC generator.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

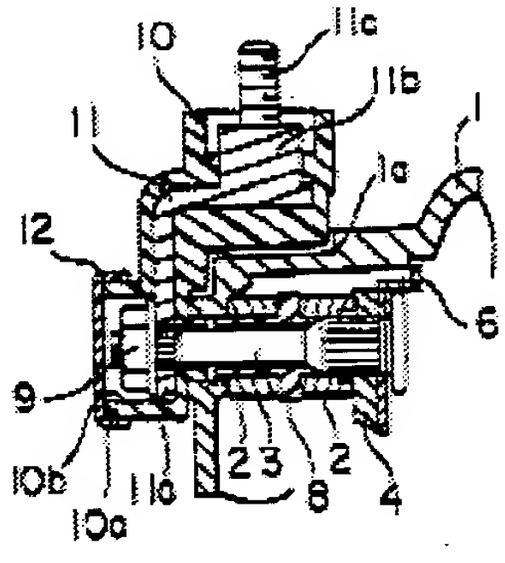
> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claim1 is rejected under 35 U.S.C. 102(b) as being anticipated by Imori et al. (U.S. Patent 4683390).

4. Imori et al. Illustrates in Figure 2 an AC generator with a bracket (1) with an opening in which an insulating bush (8) is mounted on to the opening. The insulating bush (annular insulator)(8) is fitted onto the output terminal member (output terminal bolt) (3), with the bush (heat sink) (2) located between the insulating bush (annular

insulator) (8) and the connecting terminal (terminal member) (11), with the connecting terminal (terminal member) (11) placed between the bush (annular insulator) (8) and the fastening nut (9). The fastening nut (9) is screwed onto the screw part of a take –out ends part side (AA) of the output terminal bolt (output terminal member) (3). The output terminal member (output terminal bolt) (3) is located within the insulating bush (annular insulator) (8); with the output terminal member (output terminal bolt) (3) that is fixed is projecting from the bracket (1).

FIG. 2

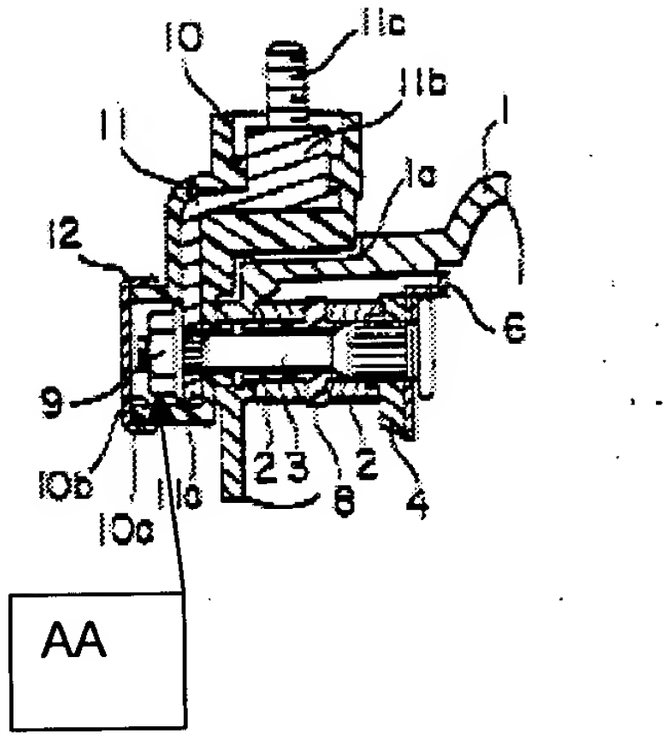


Claim Rejections - 35 USC § 103

5. Claims 2, 7 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Imori et al. (U.S. Patent 4683390) and further in view of Kusumto (J.P. Patent Application 03150010A).

6. Imori et al. Illustrates in Figure 2 an AC generator with a bracket (1) with an opening in which an insulating bush (8) is mounted on to the opening. The insulating bush (annular insulator)(8) is fitted onto the output terminal member (output terminal bolt / female screw) (3), with the bush (heat sink) (2) located between the insulating bush (annular insulator) (8) and the connecting terminal (terminal member) (11), with the connecting terminal (terminal member) (11) placed between the bush (annular insulator) (8) and the fastening nut (9). The fastening nut (9) is screwed onto the screw part of a take –out ends part side (AA) of the output terminal bolt / female screw (output terminal member) (3). The output terminal member (output terminal bolt) (3) is located within the insulating bush (annular insulator) (8); with the output terminal member (output terminal bolt) (3) that is fixed is projecting from the bracket (1). Further more, Imori et al. illustrates an annular insulator (8), which acts as a fixed part fixed to the output terminal bolt (output terminal member) (3) that is located on the opposite side of the connecting terminal (terminal member) (11). However, Imori et al. does not disclose a bushing part that is loosely fitted onto the terminal bolt.

FIG. 2



7. Kusumoto discloses in Figure 3 a bushing (insulator) (10) that is secured to the output terminal bolt (11) is inserted into a hole section (1b) that is slightly larger than the insulator (10), in order to provide a motion stopper for the output terminal bolt (11).

8. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the development of Imori et al. with the fitting of the bushing part of Kusumoto in order for the output terminal bolt to be protected against application of excessive force.

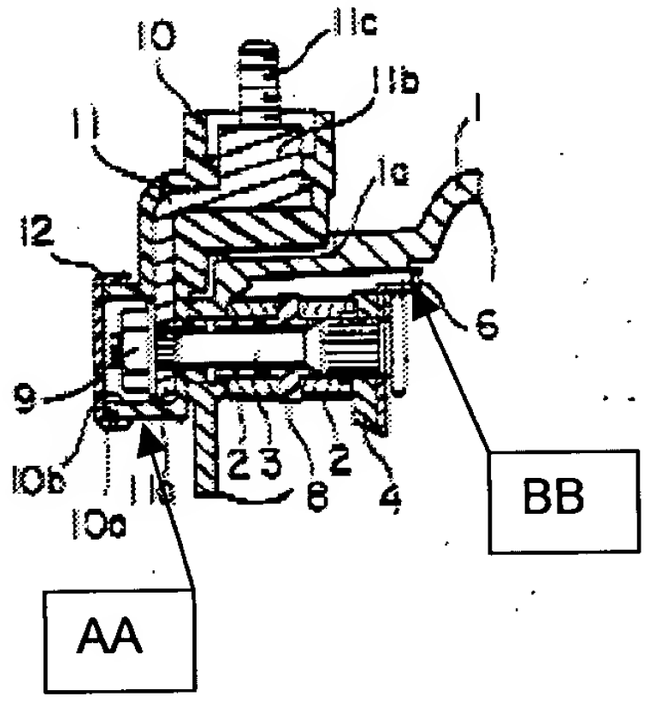
9. In regards to claim 7, it would have been obvious to one having ordinary skill in the art at the time the invention was made to set the length of the bushing to two times or more as large as outside diameter of output terminal bolt, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 05 USPQ 233.

10. Claims 3 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Imori et al. (U.S. Patent 4683390) and further in view of Saito et al. (U.S. Patent 4232238) and Kusumoto (J.P. Patent Application 03150040A).

11. Imori et al. Illustrates in Figure 2 an AC generator with a bracket (1) with an opening in which an insulating bush (8) is mounted on to the opening. The insulating bush (annular insulator)(8) is fitted onto the output terminal member (output terminal bolt) (3), with the bush (heat sink) (2) located between the insulating bush (annular insulator) (8) and the connecting terminal (terminal member) (11), with the connecting terminal (terminal member) (11) placed between the bush (annular insulator) (8) and the fastening nut (9). The fastening nut (9) is screwed onto the screw part of a take –out ends part side (AA) of the output terminal bolt / female screw (output terminal member) (3). The output terminal bolt / female screw (output terminal member) (3) is located within the insulating bush (annular insulator) (8); with the output terminal member (output terminal bolt) (3) that is fixed is projecting from the bracket (1), with a cylindrical

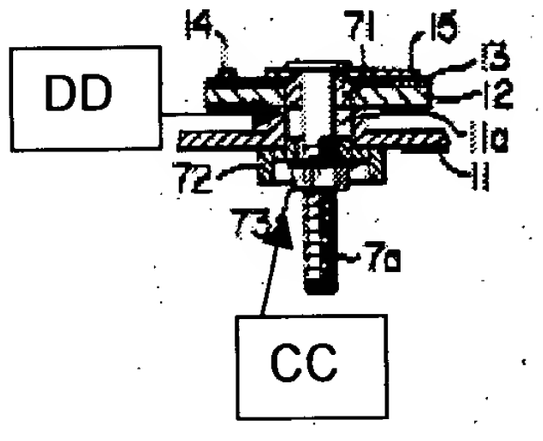
projecting part formed on a bracket (1) having a first opening (BB). However, Imori et al. does not disclose a second opening having a cylindrical projecting part with an end projection and having an insulating bush mounted onto a second opening including a cylindrical first insulating bush mounted on a first opening.

FIG. 2



11. Saito et al. illustrates in Figure 10 a cylindrical projecting part (bracket) (11) having a second opening (CC) at projecting end with the second opening (CC) mounted onto a second insulating bush (72) and a first opening (DD) having a first insulating bush (71) and a fixed part (11a) fixed to the output terminal bolt (21) between the first (71) and the second (72) insulating bush, the structure of the insulating bushes would simplify its assembly, exchange, and maintenance.

FIG. 10



12. Kusumoto discloses in Figure 3 a bushing (insulator) (10) that is secured to the output terminal bolt (11) is inserted into a hole section (1b) that is slightly larger than the insulator (10), in order to provide a motion stopper for the output terminal bolt (11).

13. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the development of Imori et al. with the fitting of the bushing part of Kusumoto in order to provide a motion stopper for the output terminal bolt and the bushing structure of Saito et al. in order to simplify its assembly, exchange, and maintenance.

14. In regards to claim 9,it would have been obvious to one having ordinary skill in the art at the time the invention was made to set the length of the bushing to two times

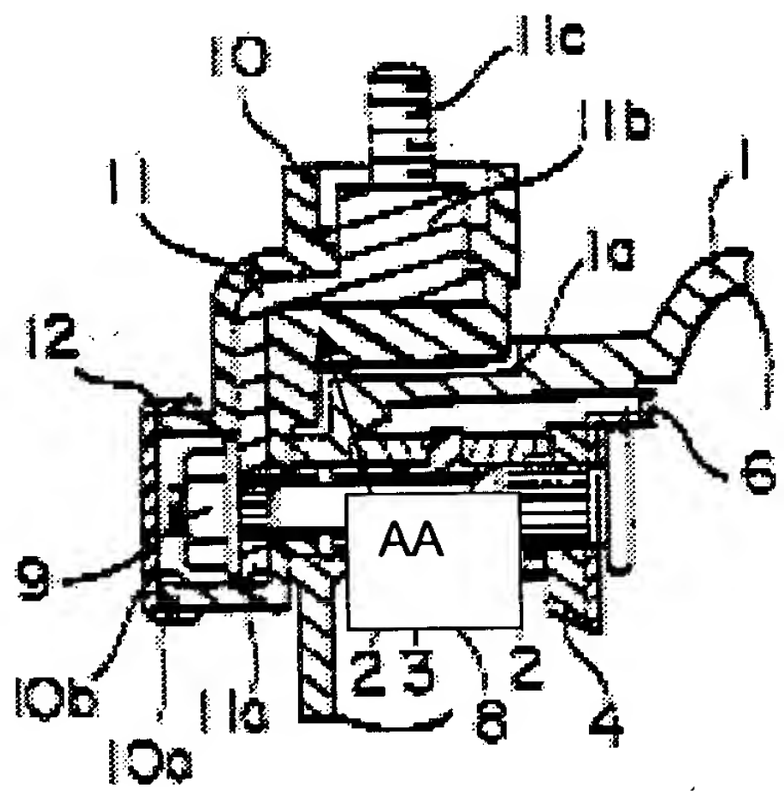
or more as large as outside diameter of output terminal bolt, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 05 USPQ 233.

15. Claims 4 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Imori et al. (U.S. Patent 4683390) and further in view of Kitamura et al. (U.S. Patent 4492885) and Kaneyuki (U.S. Patent 4843267) and Kashihara et al. (U.S. Patent 6121699) and Saito et al. (U.S. Patent 4232238).

16. Imori et al. Illustrates in Figure 2 an AC generator with a bracket (1) with an opening in which an insulating bush (8) is mounted on to the opening. The insulating bush (annular insulator)(8) is fitted onto the output terminal member (output terminal bolt) (3), with the bush (heat sink) (2) located between the insulating bush (annular insulator) (8) and the connecting terminal (terminal member) (11), with the connecting terminal (terminal member) (11) placed between the bush (annular insulator) (8) and the fastening nut (9). The fastening nut (9) is screwed onto the screw part of a take –out ends part side (AA) of the output terminal bolt (output terminal member) (3). The output terminal member (output terminal bolt) (3) is located within the insulating bush (annular insulator) (8); with the output terminal member (output terminal bolt) (3) that is fixed is projecting from the bracket (1). Further more, Imori et al. illustrates an annular insulator (8), which acts as a fixed part fixed to the output terminal bolt (output terminal member)

(3) that is located on the opposite side of the connecting terminal (terminal member) (11). However, Imori et al. does not disclose a rotor that is supported by a bracket with the stator fixed to the bracket to surround the rotor on a peripheral side of the rotor, a rectifier having a first and second cooling plate with the cooling plate fixed to the bracket and having a plurality of first diodes. The second cooling plate with a plurality of second diodes with polarities that are different from the first diodes and the fixed to the bracket. The material of the bracket being of metal.

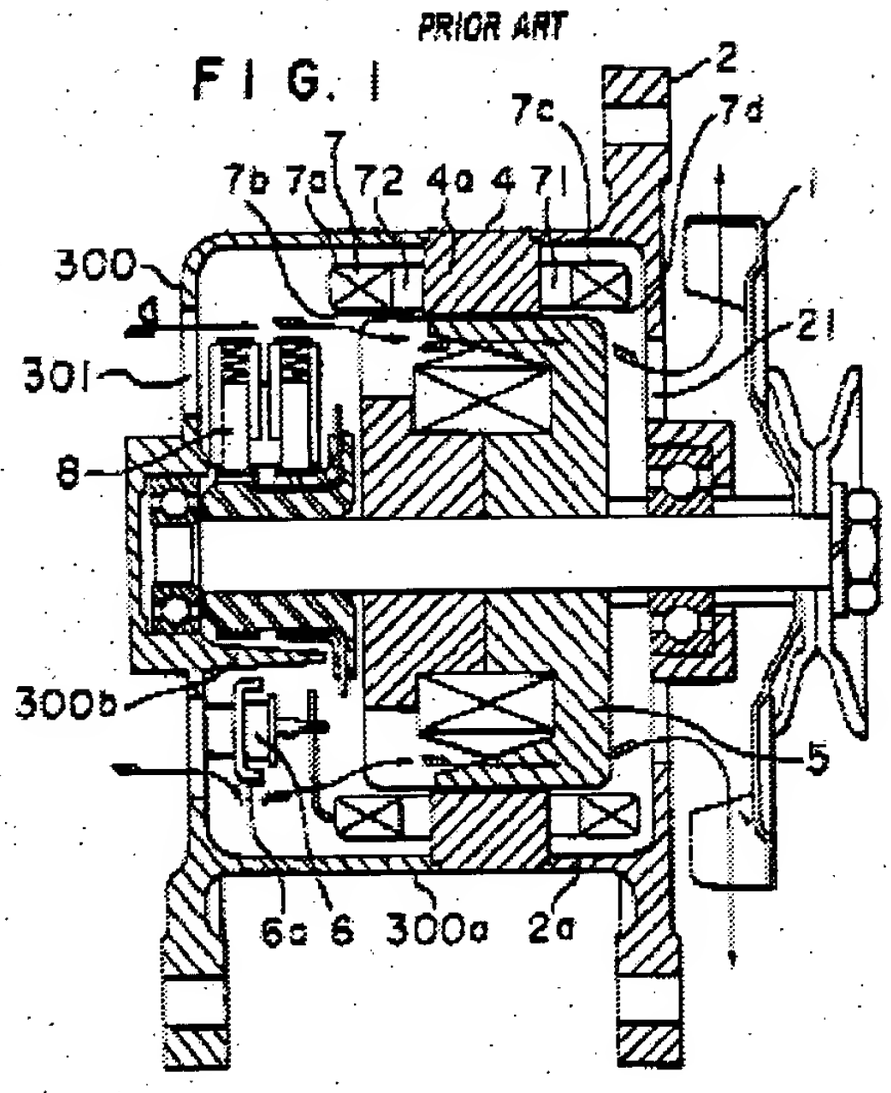
FIG. 2



17. Kitamura et al. discloses in Figure (1) a bracket (2) that supports a rotor (5) and a stator (4) fixed to the bracket to surround the rotor (5) on a peripheral side of the rotor (5), in order to feed current into the rotor.

PRIOR ART

FIG. 1

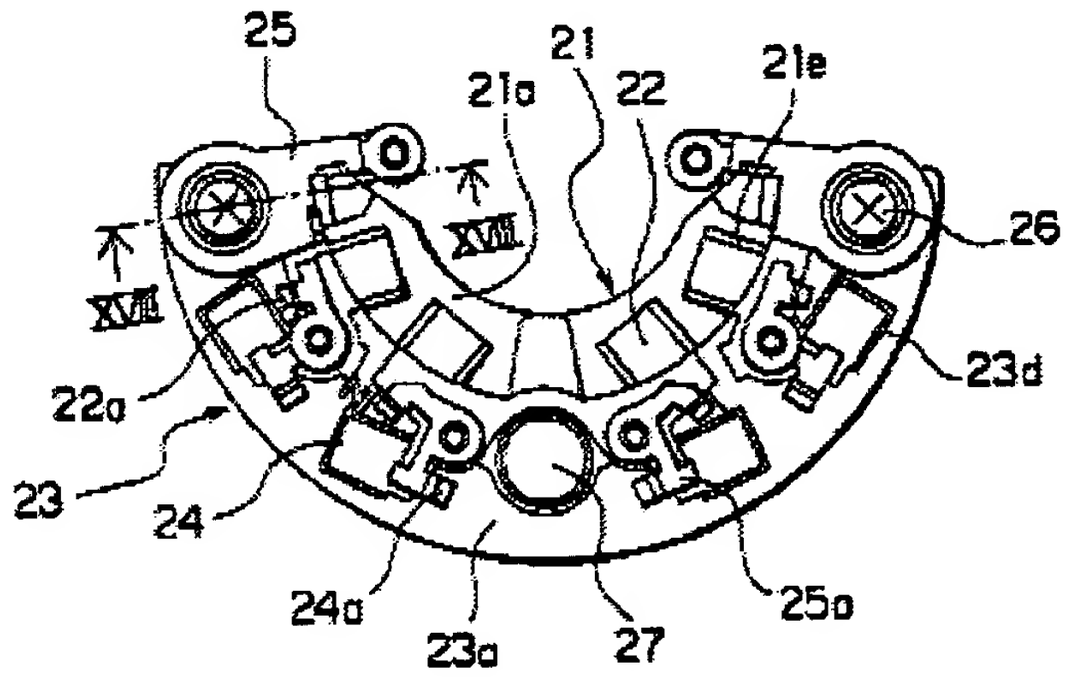


18. Kaneyuki divulges in Column 2 Paragraph 6 line 42- 43 a bracket that is generally made of an aluminum die-casting alloy.

19. Kashihara et al. discloses Figure 16 a rectifier (12) with a positive –polarity cooling plate (first cooling plate) (21) on which diodes (22) are mounted as positive-polarity side one-way conducting devices, a negative-polarity side cooling plate (second cooling plate) (23) on which diodes (24) are mounted as negative-polarity side one-way conducting devices. The positive-and negative- polarity plates (first and second cooling plate) and are fixed to the bracket (not shown), in order to form an electric conducting

portion at which the direct-fitting portion of the cooling plates and the casing come into contact with each other to form a thermal conducting portion.

FIG. 16
PRIOR ART



20. Saito et al. illustrates in Figure 10 a cylindrical projecting part (bracket) (11) having a second opening (CC) at projecting end with the second opening (CC) mounted onto a second insulating bush (72) and a first opening (DD) having a first insulating bush (71) and a fixed part (11a) fixed to the output terminal bolt (21) between the first (71) and the second (72) insulating bush, the structure of the insulating bushes would simplify its assembly, exchange, and maintenance.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the development of Imori et al. by adding a bracket that supports a rotor and a stator with the stator fixed to the bracket to surround the rotor on

a peripheral side of the rotor in order to feed current into the rotor, having the bracket made of an aluminum alloy, and a rectifier with a positive –polarity cooling plate (first cooling plate) on which diodes are mounted as positive-polarity side one-way conducting devices, a negative-polarity side cooling plate (second cooling plate) on which diodes are mounted as negative-polarity side one-way conducting devices. The positive-and negative- polarity plates (first and second cooling plate) and are fixed to the bracket, in which this structure forms an electric conducting portion at which the direct-fitting portion of the cooling plates and the casing come into contact with each other to form a thermal conducting portion.

21. In regards to claim 10, it would have been obvious to one having ordinary skill in the art at the time the invention was made to set the length of the bushing to two times or more as large as outside diameter of output terminal bolt, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 05 USPQ 233.

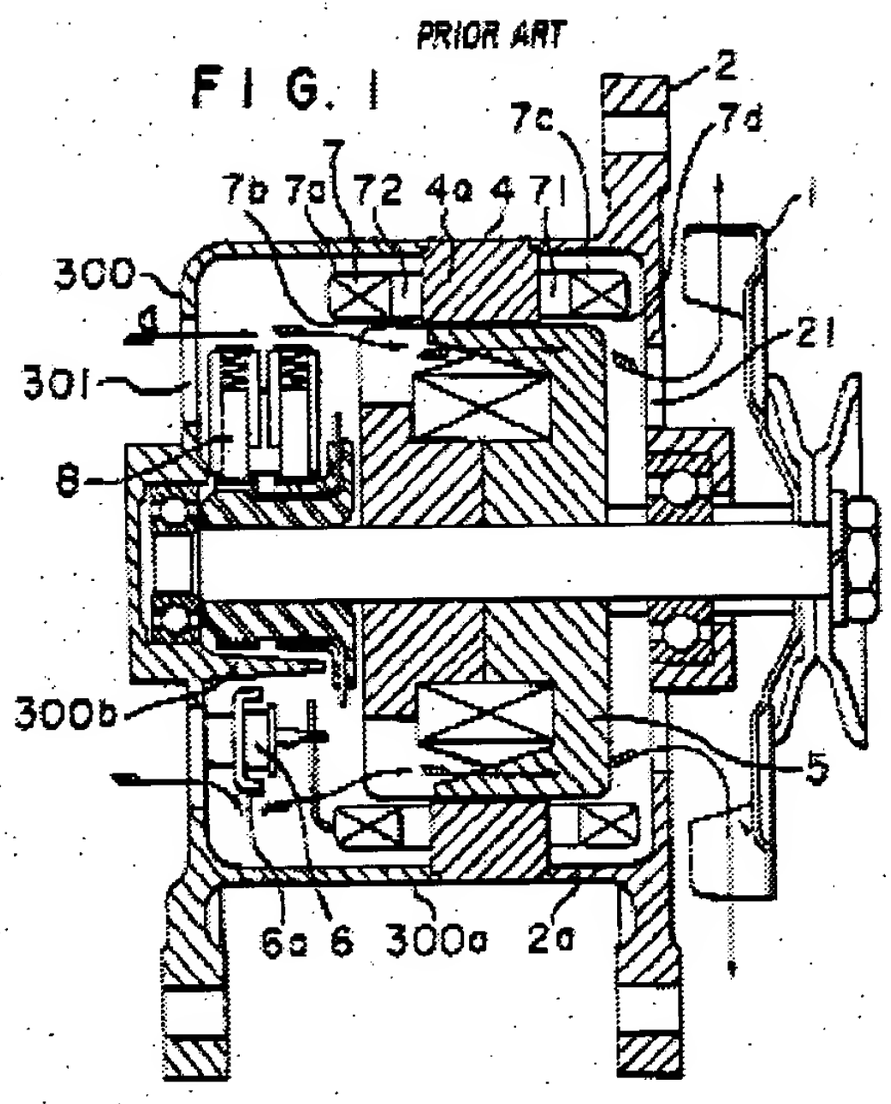
22. Claim 5 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Imori et al. (U.S. Patent 4683390) and further in view of Kusumto (J.P. Patent Application 03150010A) and Kitamura et al. (U.S. Patent 4492885) and Kaneyuki (U.S. Patent 4843267) and Kashihara et al. (U.S. Patent 6121699).

23. Imori et al. Illustrates in Figure 2 an AC generator with a bracket (1) with an opening in which an insulating bush (8) is mounted on to the opening. The insulating bush (annular insulator)(8) is fitted onto the output terminal member (output terminal bolt / female screw) (3), with the bush (heat sink) (2) located between the insulating bush (annular insulator) (8) and the connecting terminal (terminal member) (11), with the connecting terminal (terminal member) (11) placed between the bush (annular insulator) (8) and the fastening nut (9). The fastening nut (9) is screwed onto the screw part of a take –out ends part side (AA) of the output terminal bolt / female screw (output terminal member) (3). The output terminal member (output terminal bolt) (3) is located within the insulating bush (annular insulator) (8); with the output terminal member (output terminal bolt) (3) that is fixed is projecting from the bracket (1). Further more, Imori et al. illustrates an annular insulator (8), which acts as a fixed part fixed to the output terminal bolt (output terminal member) (3) that is located on the opposite side of the connecting terminal (terminal member) (11). However, Imori et al. does not disclose a bushing part that is loosely fitted onto the terminal bolt.

24. Kusumoto discloses in Figure 3 a bushing (insulator) (10) that is secured to the output terminal bolt (11) is inserted into a hole section (1b) that is slightly larger than the insulator (10), in order to provide a motion stopper for the output terminal bolt (11). Kitamura et al. discloses in Figure (1) a bracket (2) that supports a rotor (5) and a stator (4) fixed to the bracket to surround the rotor (5) on a peripheral side of the rotor (5), in order to feed current into the rotor.

PRIOR ART

FIG. 1



25. Kaneyuki divulges in Column 2 Paragraph 6 line 42- 43 a bracket that is generally made of an aluminum die-casting alloy.

26. Kashihara et al. discloses Figure 16 a rectifier (12) with a positive –polarity cooling plate (first cooling plate) (21) on which diodes (22) are mounted as positive-polarity side one-way conducting devices, a negative-polarity side cooling plate (second cooling plate) (23) on which diodes (24) are mounted as negative-polarity side one-way conducting devices. The positive-and negative- polarity plates (first and second cooling plate) and are fixed to the bracket (not shown), in order to form an electric conducting fitting portion of the cooling plates and the casing come into contact with each other to form a thermal conducting portion.

27. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the development of Imori et al. with the fitting of the bushing part in order for the output terminal bolt to be protected against application of excessive force and adding a bracket that supports a rotor and a stator with the stator fixed to the bracket to surround the rotor on a peripheral side of the rotor in order to feed current into the rotor, having the bracket made of an aluminum alloy, and a rectifier with a positive –polarity cooling plate (first cooling plate) on which diodes are mounted as positive-polarity side one-way conducting devices, a negative-polarity side cooling plate (second cooling plate) on which diodes are mounted as negative-polarity side one-way conducting devices. The positive-and negative- polarity plates (first and second cooling plate) and are fixed to the bracket, in which this structure forms an electric conducting portion at which the direct-fitting portion of the cooling plates and the casing come into contact with each other to form a thermal conducting portion.

28. In regards to claim 8, it would have been obvious to one having ordinary skill in the art at the time the invention was made to set the length of the bushing to two times or more as large as outside diameter of output terminal bolt, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 05 USPQ 233.

29. Claim 6 and 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Imori et al. (U.S. Patent 4683390) and further in view of Saito et al. (U.S. Patent 4232238) and Kusumoto (J.P. Patent Application 03150040A) and Kitamura et al. (U.S. Patent 4492885) and Kaneyuki (U.S. Patent 4843267) and Kashihara et al. (U.S. Patent 6121699).

30. Imori et al. Illustrates in Figure 2 an AC generator with a bracket (1) with an opening in which an insulating bush (8) is mounted on to the opening. The insulating bush (annular insulator)(8) is fitted onto the output terminal member (output terminal bolt) (3), with the bush (heat sink) (2) located between the insulating bush (annular insulator) (8) and the connecting terminal (terminal member) (11), with the connecting terminal (terminal member) (11) placed between the bush (annular insulator) (8) and the fastening nut (9). The fastening nut (9) is screwed onto the screw part of a take –out ends part side (AA) of the output terminal bolt / female screw (output terminal member) (3). The output terminal bolt / female screw (output terminal member) (3) is located within the insulating bush (annular insulator) (8); with the output terminal member (output terminal bolt) (3) that is fixed is projecting from the bracket (1), with a cylindrical projecting part formed on a bracket (1) having a first opening (BB). However, Imori et al. does not disclose a second opening having a cylindrical projecting part with an end projection and having an insulating bush mounted onto a second opening including a cylindrical first insulating bush mounted on a first opening.

31. Saito et al. illustrates in Figure 10 a cylindrical projecting part (bracket) (11) having a second opening (CC) at projecting end with the second opening (CC) mounted onto a second insulating bush (72) and a first opening (DD) having a first insulating bush (71) and a fixed part (11a) fixed to the output terminal bolt (21) between the first (71) and the second (72) insulating bush, the structure of the insulating bushes would simplify its assembly, exchange, and maintenance.

32. Kusumoto discloses in Figure 3 a bushing (insulator) (10) that is secured to the output terminal bolt (11) is inserted into a hole section (1b) that is slightly larger than the insulator (10), in order to provide a motion stopper for the output terminal bolt (11).

33. Kitamura et al. discloses in Figure 1 a bracket (2) that supports a rotor (5) and a stator (4) fixed to the bracket to surround the rotor (5) on a peripheral side of the rotor (5), in order to feed current into the rotor.

34. Kaneyuki divulges in Column 2 Paragraph 6 line 42- 43 a bracket that is generally made of an aluminum die-casting alloy.

35. Kashihara et al. discloses Figure 16 a rectifier (12) with a positive –polarity cooling plate (first cooling plate) (21) on which diodes (22) are mounted as positive-polarity side one-way conducting devices, a negative-polarity side cooling plate (second cooling plate) (23) on which diodes (24) are mounted as negative-polarity side one-way

conducting devices. The positive-and negative- polarity plates (first and second cooling plate) and are fixed to the bracket (not shown), in order to form an electric conducting portion at which the direct-fitting portion of the cooling plates and the casing come into contact with each other to form a thermal conducting portion.

36. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the development of Imori et al. with the fitting of the bushing part, in order to provide a motion stopper for the output terminal bolt and the bushing structure of Saito et al. in order to simplify its assembly, exchange, and maintenance and adding a bracket that supports a rotor and a stator with the stator fixed to the bracket to surround the rotor on a peripheral side of the rotor in order to feed current into the rotor, having the bracket made of an aluminum alloy, and a rectifier with a positive –polarity cooling plate (first cooling plate) on which diodes are mounted as positive-polarity side one-way conducting devices, a negative-polarity side cooling plate (second cooling plate) on which diodes are mounted as negative-polarity side one-way conducting devices. The positive-and negative- polarity plates (first and second cooling plate) and are fixed to the bracket, in which this structure forms an electric conducting portion at which the direct- fitting portion of the cooling plates and the casing come into contact with each other to form a thermal conducting portion.

37. In regards to claim 9,it would have been obvious to one having ordinary skill in the art at the time the invention was made to set the length of the bushing to two times or more as large as outside diameter of output terminal bolt, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 05 USPQ 233.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Heba Elkassabgi whose telephone number is (703) 305-2723. The examiner can normally be reached on M-Th (6:30-3:30), and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3431 for regular communications and (703) 305-3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

Heba Yousri Elkassabgi

June 3, 2002

NESTOR RAMIREZ
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800